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LXVII.—*The Squirrels described as Sciurus steerii from Balabac and Palawan.* By OLDFIELD THOMAS.

IN 1876* Dr. Günther described and figured two squirrels collected by Dr. Steere on the islands of Balabac and Palawan as *Sciurus steerii*, he being under the impression that they represented but a single species inhabiting the two islands. Since then, however, a number of these squirrels have come to Europe, and all those from Balabac prove to be precisely identical with Dr. Günther's No. 1, from that island, while all those from Palawan, although considerably more variable, *inter se*, than the Balabac ones, agree in differing from the latter by their browner, less rufous colour, their greyish sides, and black-tipped tail, as described by Dr. Günther under 2. In belly-colour, however, they may be white or either partially or wholly rufous.

This being the case, it is evident that the squirrels from the two islands should be considered as distinct species, and I would propose to restrict the name *S. steerii* to Dr. Günther's No. 1, the foremost figure on his plate, with its type B.M. no. 76. 10. 4. 4, and to assign the name *S. juvenus* to the Palawan species, described by Dr. Günther under No. 2 and drawn in the background of his plate, its type being B.M. no. 76. 10. 4. 3.

With regard to the variation in the belly-colour of *S. juvenus* it is to be noticed that the greatest extremes, all white and all red, are shown by specimens from the same place, Puerto Princesa.

LXVIII.—*Note on the Copepod Genus Oithona.* By G. P. FARRAN, Department of Agriculture and Technical Instruction, Fisheries Branch, Dublin.

IN going through some collections of Copepoda taken by the Department of Agriculture's cruiser 'Helga' off the W. and S.W. coasts of Ireland I have noticed the presence of two species of the genus *Oithona* which at first sight appear to be *O. plumifera* and *O. setigera*, but on a closer examination are seen to possess some minute points of difference from those species. As the local distribution of the members of this

* P. Z. S. 1876, p. 735, pl. lxix.

genus seems to be in great measure influenced by the salinity of the water which they inhabit, and, consequently, their correct determination a matter of importance when they occur in collections of plankton made to show the correlation of biological and hydrographical facts, it seems advisable to call attention to the matter in a preliminary note.

The history of that section of the genus *Oithona* to which *O. plumifera* and *O. setigera* belong, characterized by a long anteriorly directed rostrum visible in dorsal view, is briefly as follows:—In 1843 Baird* briefly described and named as *Oithona plumifera* a copepod taken at the surface in lat. $3^{\circ} 24'$ N., long. $22^{\circ} 7'$ W. The description was accompanied by a rude figure of the animal in dorsal view. The only points which can guide us to a discovery of what the animal really was were the general form of the body, the length, shown as a line 2 mm. long, the length of the first antennæ, almost equal to the body, and the presence of four plumose setæ on either side “attached to the sides of the insect” (in reality they are attached to the second basal joints of the swimming-feet).

In 1847 Dana described as *Scribella scriba* a specimen taken by the United States Exploring Expedition; but in 1852, in a further account of the same collection, he withdrew the name and referred the specimen to *O. plumifera*, Baird. He gave at the same time a short description and a few figures of *O. plumifera*, and also briefly described and figured a second species, *O. setigera*, characterized by the setæ on the second basal joints of the swimming-feet being clavate at their extremities instead of being plumose. Claus, in 1863 and 1866, described and figured, from Messina and Nizza, *O. spinirostris*, which has been generally regarded as synonymous with *O. plumifera*, and which I shall refer to below. In 1864 Boeck† described from the Christiania Fiord, under the name of *O. spinifrons*, a species which several authors (V. Breemen, G. O. Sars) believe to be identical with *O. plumifera*, but which Giesbrecht refers, with a query, to *O. similis*, Claus.

In the ‘Challenger’ Reports, 1883, Brady referred all the specimens of *Oithona* which he met with to a new species, *O. challengerii*. From the figures which he gives it appears to resemble *O. setigera* very closely, as the third joint of the exopodite of the first foot bears three outer-edge spines, the

* ‘Zoologist,’ vol. i. (1843).

† Vid. Selsk. Forhandl. Christiania. I only know this paper through Giesbrecht’s summary in Wiss. Unt. Deutschen Meere (Kiel, 1882).

first maxilla has a moderate seta on the endopodite and the mandible four setæ on the endopodite. The figure of the mandible (pl. xl. fig. 12) is wrongly referred to *Zaus goodsiri* both in the explanation of the plate and the heading to the species in the text, and there is no reference to it in the description of *O. challengeri*. There can be no doubt, however, that it really belongs to *O. challengeri*, as the mandible of *Z. goodsiri* is of a quite different form.

Finally, Giesbrecht, in 1892*, redescrbed and figured, for the first time in sufficient detail, both *O. plumifera* and *O. setigera*, the former of which he had met with in collections from the Mediterranean and from the Atlantic, Pacific, and Indian Oceans, and the latter from the Pacific.

He relied for his identification on the presence of plumose or clavate outer-edge setæ on the second basal of the swimming-feet of the respective species.

The following is a brief description of the two species which, in addition to *O. similis* and *O. nana*, occur off the west coast of Ireland. The allusions to *O. plumifera* and *O. setigera* must be taken as referring to Giesbrecht's description of those species.

Oithona atlantica, sp. n.

Female.—Length 1·0–1·16 mm.

Cephalothorax of the same form as in *O. plumifera*, the rostrum being as in that species in dorsal and lateral view. Abdomen five-jointed, the proportional length of the joints and the furca being 8 : 20 : 10 : 9 : 11 : 7. Furcal setæ as in *O. plumifera*.

First antenna reaching almost to the end of the body.

Second antenna as in *O. plumifera*.

Mandible as in *O. plumifera*, except that the endopodite bears four subequal setæ instead of three.

First maxilla as in *O. plumifera*, except that the endopodite bears a seta about three times as long as itself. The second inner lobe is only just indicated and bears no seta.

Second maxilla and maxillipede as in *O. plumifera*.

First foot as in *O. plumifera*, with two outer-edge spines on the third joint of the exopodite; the outer-edge seta of the second basal is, however, more slender and apparently not feathered.

Second and third feet without an inner-edge seta on the first basal joint; the second basal joint has a very slender

* 'Fauna u. Flora Golf. Neapel' (1892).

short outer-edge seta; exopodite and endopodite as in *O. plumifera*.

Fourth foot without an inner-edge seta on the first basal joint; an outer-edge seta on the second basal joint was apparently absent in all the specimens examined; exopodite and endopodite as in *O. plumifera*.

Fifth foot as in *O. plumifera*.

Male unknown.

Distribution. Common off the west and south-west coasts of Ireland, 0–1000 fath. It is usually found in waters of a salinity of 34·8 per mille and over, but has a few times been taken in much less saline water.

Oithona pelagica, sp. n.

Female.—Length 1·36–1·52 mm.

Cephalothorax as in *O. plumifera*, the rostrum being visible in dorsal view as in that species. Abdomen five-jointed, the proportional lengths of the joints and the furca being 11:32:15:15:18:14.

First antenna reaching almost to the end of the body.

Second antenna as in *O. plumifera*.

Mandible as in *O. plumifera*, except that the endopodite bears four subequal setæ.

First maxilla of the same general form as in *O. plumifera*; the endopodite, however, bears a medium-sized seta and the second inner lobe bears a seta which reaches to the end of the third inner lobe. The seta, which is situated at the base of the exopodite in *O. plumifera* and represents the first outer lobe, could not be made out, but may have been overlooked.

Second maxilla and maxillipede as in *O. plumifera*.

First foot as in *O. setigera*, with three outer-edge spines on the third joint of the exopodite; the outer-edge seta of the second basal is, however, very slender and tapered, about equal in length to the terminal spine of the exopodite.

Second to fourth feet each with a very minute inner-edge seta on the second basal. The first basal bears on its outer margin a very slender tapering seta, about equal in length, in the second foot, to the exopodite, but much shorter in the third and fourth feet. Exopodites and endopodites as in *O. plumifera*.

Fifth foot as in *O. plumifera*.

Male unknown.

Distribution. Occurs off the S.W. coast of Ireland in waters of a salinity of 35·4 per mille and over. It has been taken in nets fishing from depths of ca. 500 fathoms to the

surface, but the exact depth at which it occurred could not be ascertained.

It will be seen from the above descriptions that *O. setigera* and *O. pelagica* are at once separable from *O. plumifera* and *O. atlantica* by the possession of three outer-edge spines on the third joint of the exopodite of the first foot, the two latter species possessing only two such spines. The differences between the members of each group are shown in the following table:—

<i>O. plumifera.</i>	<i>O. atlantica.</i>
Length 1.0-1.5 mm.	Length 1.0-1.16 mm.
Endopodite of mandible with three setæ.	Endopodite of mandible with four setæ.
Endopodite of first maxilla with minute seta.	Endopodite of first maxilla with moderate seta.
Outer-edge seta on second basal of first to fourth feet very long, strong, feathered on first to third, smooth on fourth.	Outer-edge seta on second basal of first to third feet very slender, smooth, absent on fourth foot.
Short smooth seta on inner edge of second basal of second to fourth feet.	No seta on inner edge of second basal of second to fourth feet.
<i>O. setigera.</i>	<i>O. pelagica.</i>
Length 1.5-1.6 mm.	Length 1.36-1.52 mm.
Outer-edge seta on second basal of first to fourth feet stout, clavate at end.	Outer-edge seta on second basal of first to fourth feet very slender, tapered.

Thus, while *O. plumifera* and *O. atlantica* are separated by several small points of difference, the distinction between *O. setigera* and *O. pelagica* lies only in the presence of clavate or tapered setæ on the basals of the swimming-feet. Possibly this distinction may be regarded by some as insignificant; but until it is shown that the two varieties of setæ can occur in specimens from all localities, it ought not to be disregarded.

It is very probable that both *O. atlantica* and *O. pelagica* have been already described, but it is difficult to discover under what name. Boeck, in his description of *O. spinifrons*, does not mention any point which is not common to both species, and his name must accordingly lapse for uncertainty. Claus, in describing *O. spinirostris*, does not mention the number of outer-edge spines on the exopodite of the first foot, but in his figure of the first maxilla he shows a moderately long seta on the endopodite and a seta on the second inner lobe. This last character makes it probable that he refers either to *O. setigera* or *O. pelagica* (if either of

these species occur in the Mediterranean), but the probability is too slight to permit the use of his name. As far as Brady's description of *O. challenger* goes it is applicable to both *O. setigera* and *O. pelagica*; but the absence of any reference to or figure of the outer-edge setæ of the basipodites of the swimming-feet prevents a definite conclusion being reached.

With regard to recent records of *O. plumifera* and *O. setigera*, we find in the 'Quarterly Bulletins of the International Council for the Investigation of the Sea' that *O. plumifera* occurs in the plankton lists of Denmark, Norway, Sweden, Holland, Germany, Russia, England, and Ireland. The Irish records, for which I am responsible, refer to the species described above as *O. atlantica*, as do likewise the records in the various papers in the 'Reports on the Sea and Inland Fisheries of Ireland.' The quarterly plankton lists of Scotland contain both *O. setigera* and, more rarely, *O. plumifera*, and Dr. T. Scott* has recorded *O. setigera* from the Firth of Forth and from off Shetland. It seems probable that some, at any rate, of these records refer to one or other of the species described above; and even if the points which I have relied on in separating the species should be regarded as of varietal rather than of specific rank, it is still incumbent on those who record the species for statistical purposes to indicate which variety is referred to.

LXIX.—On Two new Genera of Recent Pharetronid Sponges.

By R. KIRKPATRICK.

[Plates XIII.-XV.]

WHEN looking through some material in a large bottle mostly containing pieces of *Stylaster sanguineus*, obtained by the 'Challenger' from a depth of 70 fathoms off Api, New Hebrides, I came across two specimens which at first sight looked like pieces of *Millepora*. A closer inspection, however, showed them to be Lithonine sponges, and of great interest, because the soft tissues have been fairly well preserved. The sponges belong to a new genus and species, which I propose to name *Minchinella* † *lamellosa*. A second new genus must be established to include certain sponges

* 'Ninth Ann. Rep. F. B. Scotland' (1891); 'Twentieth Ann. Rep. F. B. Scotland' (1902).

† Named in honour of Prof. E. A. Minchin, M.A., Professor of Protozoology in the University of London.